

or extremely light ..... *fraternus*  
 15<sup>1</sup>. Head, pronotum, and elytra all alutaceous between the punctures; pronotal puncta-  
 tion light and small ..... *infuscatus, ingeminatus*

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## Undescribed Species of Crane-Flies from the Himalaya Mountains (Diptera: Tipulidae), X<sup>1</sup>

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**Abstract** Six new species from Kumaon, Nepal, and Sikkim, all belonging to the Eriopterine genus *Ormosia* Rondani, are described. These are *Ormosia* (*Oreophila*) **stenostyla**, and five species belonging to a new subgenus **Parormosia**, *O. (P.) leucoplagia*, *O. (P.) leucostictula*, *O. (P.) mahabharatae*, *O. (P.) peramata*, and *O. (P.) perdiffusa*.

Part IX under this title was published in the **Journal of the New York Entomological Society**, **72**: 168–173, 1964. The species described herewith belong to the extensive genus *Ormosia* Rondani, well represented throughout the Holarctic Region and including numerous species in the Himalayas and in western China. Most of the materials were included in the rich collections taken by Dr. Fernand Schmid during the 1950's, as discussed in many earlier papers. A single species was collected by Dr. Edward I. Coher in Nepal. I am deeply indebted to the collectors for the privilege of retaining the types of these novelties in my personal collection.

*Ormosia* (*Oreophila*) **stenostyla** n. sp.

Size medium (wing of male to 5.5 mm); general coloration grayish brown; antennae elongate; femora brownish yellow with a narrow nearly terminal brown ring; wings

<sup>1</sup> Contribution from the Entomological Laboratory, University of Massachusetts.

pale whitish yellow, clouded with brown, cell *1st M*<sub>2</sub> closed vein *2nd A* sinuous; male hypopygium with the narrow dististyles subterminal.

MALE. Length about 4.5–4.7 mm; wing 5–5.5 mm; antenna about 2.2–2.3 mm.

Rostrum dark brown; palpi brownish black. Antennae of male elongate, about one-half the body; scape and pedicel brown, flagellum black; flagellar segments elongate with dense long white setae, subequal in length to the sparse verticils. Head brownish gray.

Pronotum brown, sides of scutellum yellowish white. Mesonotum almost uniformly dark grayish brown, the praescutum with four scarcely differentiated darker stripes; tuberculate pits black, pseudosutural foveae brownish black. Pleura somewhat paler brown, dorsopleural membrane light brown. Halteres with stem yellow, knob light brown. Legs with coxae and trochanters yellow, forecoxae a little darker; remainder of legs brownish yellow, femora with a nearly terminal brown ring, tips of tibiae very narrowly darkened, tarsi dark brown. Wings pale whitish yellow, clouded with brown, including areas at origin of *Rs* and over *Sc*<sub>2</sub>, cord and outer end of cell *1st M*<sub>2</sub>; all outer veins indistinctly seamed with paler brown; stigma darker; the whitened ground areas chiefly on costal third and near base of wing; veins brown, *Sc* distally more yellowed. Abundant macrotrichia in wing cells. Venation: *Sc*<sub>1</sub> ending opposite *R*<sub>2</sub>, *Sc*<sub>2</sub> at near one-fourth to one-fifth *Rs*; *R*<sub>2</sub> a little longer than *R*<sub>2+3</sub>; cell *1st M*<sub>2</sub> closed; *m-cu* shortly beyond fork of *M*; vein *2nd A* sinuous on outer half.

Abdomen dark brown. Male hypopygium with tergal lobe transverse, the apex extensively filled with pale membrane, sides of lobe with long setae. Basistyle produced slightly beyond point of insertion of dististyles as a conical point. Both dististyles narrow, the outer one blackened, its apical half with dense spiculate points; inner style a little longer, constricted beyond midlength, apex obtuse. Phallosome a depressed–flattened plate, as in the subgenus, the apex subtruncate.

HOLOTYPE ♂, Kanol, Pauri Garhwal, Kumaon, 8,530 feet, August 19, 1958 (Schmid). Paratopotypes, 2 ♂♂.

The most similar regional species is *Ormosia (Oreophila) hutchinsonae* Alexander which has cell *1st M*<sub>2</sub> closed, as in the present fly, but with the anal veins divergent. This species has the antennae shorter and with the hypopygial details distinct, particularly the inner dististyle. The most recent discussion of the subgenus *Oreophila* Lackschewitz is by the writer (Philippine J. Sci., **86**: 318, 1957).

*Ormosia* Rondani; subgenus **Parormosia** n. subgen.

Antennae with verticils of proximal flagellar segments greatly lengthened, smaller to greatly reduced on outer segments. Wings with cell *1st M*<sub>2</sub> closed or more rarely open by the atrophy of *m*; anal veins divergent. Male hypopygium with both dististyles elongate, outer style bifid, provided with conspicuous spinoid setae; inner style simple or bifid. Gonapophyses either simple or bifid at tips. Aedeagus very slender, with a broad sheath or narrow subtending plates.

TYPE OF SUBGENUS. *Ormosia (Parormosia) nigripila* (Osten-Sacken). Eastern Nearctic.

Other included species include the Nearctic *O. (P.) divergens* (Coq.), *O. (P.) fusiformis* (Doane), *O. (P.) gaspensis* Alex., *O. (P.) luteola* Dietz, *O.*

(*P.*) *pygmaea* (Alex.), *O. (P.) viduata* Alex., and the doubtfully distinct *O. (P.) palpalis* Dietz. Asiatic species include *O. (P.) diversipes* Alexander ( $\delta$ ) (syn. *O. (P.) atripes* Alexander, ♀) and *O. (P.) nippostalpina* Alexander, of Japan; *O. (P.) angustaurata* Alexander, *O. (P.) lataurata* Alexander and *O. (P.) nigripennis* Alexander, of western China; *O. (P.) discalpa* Alexander, *O. (P.) funeralis* Alexander, *O. (P.) leucoplaga* n. sp., *O. (P.) leucostictula* n. sp., *O. (P.) mahabharatae* n. sp., *O. (P.) peramata* n. sp., and *O. (P.) perdiffusa* n. sp., of the Himalayan Region (Oriental-Palaeartic).

*Parormosia* is a compact unit of the genus, best separated from the other subgenera of *Ormosia* by the distinctive and unusually uniform structure of the male hypopygium. The Nearctic and Japanese species have the wings uniform in color but several species in the Indo-Chinese fauna have these strikingly patterned with pale yellow or white. The distribution of the pale spots in certain of these species is surprisingly similar to the condition found in some species in the related genus *Erioptera*, as in the *alboguttata* group in Asia and in the subgenus *Mesocyphona* Osten-Sacken in the New World, including species such as *E. (M.) caliptera* Say, *E. (M.) distincta* Alexander, *E. (M.) dulcis* Osten-Sacken, and many others in Tropical America.

*Ormosia (Parormosia) leucoplaga* n. sp.

Thorax varying from brownish yellow to dark brown; antennal flagellum black; femora black, tips narrowly yellow, remainder of legs brownish black; wings brown with large whitened areas, all restricted to the vicinity of the veins; male hypopygium with three major setae on inner dististyle; apex of aedeagus a low flattened cap.

MALE. Length about 4.2–4.5 mm; wing 5–5.5 mm.

FEMALE. Length about 5 mm; wing 6 mm.

Rostrum and palpi black. Antennae with the more basal segments yellow, the outer ones black, flagellar segments with a long dense white pubescence, the more proximal segments with long verticils. Head dark brown.

Thorax of the holotype dark brown, praescutum vaguely patterned, posterior sclerites of notum and the pleura more pruinose; in other specimens in the type series praescutum paler, brownish yellow. Halteres light yellow. Legs with coxae brownish black, pruinose, trochanters darkened; femora black, tips narrowly and abruptly yellow, the remainder of legs brownish black, the extreme tibial bases yellowed; other specimens have the tibiae and basitarsi yellow to black. Wings with the ground brown, costal border darker; a conspicuous whitened pattern that consists of large areas restricted to the vicinity of the veins, including a band at cord, with large spots in bases of cells *R* and *M*, at origin of *Rs*, *Sc*<sub>2</sub>, outer end of cell *1st M*<sub>2</sub>, and at margins of all outer veins, smallest at *R*<sub>5</sub>, largest at *2nd A*; veins light brown, very pale yellow and difficult to see in the whitened areas. Venation: *Sc*<sub>2</sub> nearly opposite midlength of *Rs*; anal veins divergent.

Abdomen, including hypopygium, brownish black to black. Male hypopygium with modified setae of inner dististyle three, placed close together at near midlength of style. Phallosome with both spines of gonapophysis slender, not conspicuously divaricate. Aedeagus terminating in a small, low flattened cap, the shoulders of the subtending sheath rounded.

HOLOTYPE ♂, Namnasa, Sikkim, 10,000 feet, July 11, 1959 (Schmid). Allotopotype, ♀. Paratopotypes, ♂ ♀, with the types, 9,500 feet, July 12–13, 1959 (Schmid).

In the type series the size and distribution of the pale spots on the wing

vary markedly, in some the spots being much smaller than in the holotype, as described, those along cord being broken into separate areas, not broad and continuous. Other specimens have the antennal flagellum yellowed while there is further variation in the coloration of the tibiae, from yellow to almost black. This latter condition evidently is sexual as is found in other species of the subgenus. The fly differs from other generally similar species, as *Ormosia* (*Parormosia*) *leucostictula* n. sp. and *O. (P.) mahabharatae* n. sp., in the nature of the wing pattern.

*Ormosia (Parormosia) leucostictula* n. sp.

General coloration of mesonotal praescutum and scutum brownish yellow, remainder of thorax light brown; antennae light yellow; wings pale brown with conspicuous white spots adjoining the veins and fewer interpolated dots in the cells; male hypopygium with modified setae of inner dististyle two; spines of gonapophysis stout, divaricate; apex of aedeagus extended, terminating in two minute divaricate triangular blades.

MALE. Length about 4 mm; wing 4.5 mm.

Rostrum and palpi black. Antennae light yellow; basal flagellar segments oval, the outer ones more elongate; verticils of proximal segments elongate, all with long, dense white setae. Head brown.

Pronotum medium brown. Mesonotal praescutum and scutum brownish yellow, anterior end of praescutum slightly darkened, especially medially, scutellum and postnotum light brown; setae of scutellum very long, erect. Pleura light brown. Halteres broken. Legs with coxae light brown, trochanters obscure yellow; remainder of legs missing. Wings conspicuously patterned with pale brown and white, the costal dark costal areas more extensive than the whitened interspaces; the major white markings are at arculus, origin of  $R_s$ ,  $Sc_2$ , cord, and at tips of  $Sc_1$ ,  $R_{1+2}$ ,  $R_3$ , and  $R_4$ ; other large marginal whitened areas in cells *Cu*, *1st A*, and *2nd A*, the last occupying the broad axillary space; besides the above markings that are restricted to the vicinity of the veins there are fewer small whitened spots in the cells; veins light brown, light yellow in the whitened areas, especially in the costal field. Venation:  $Sc_1$  ending about opposite  $R_2$ ,  $Sc_2$  far retracted, about opposite one-third  $R_s$ ; *m-cu* some distance before fork of *M*; vein *2nd A* oblique, the cell unusually broad.

Abdomen, including hypopygium, dark brown. Male hypopygium with tip of outer dististyle acute, inner style with two modified setae that are shorter than the apex of the style beyond the outermost. Phallosome with the spines of each gonapophysis divergent, broad-based, narrowed to the acute tips; aedeagus projecting beyond the subtending pale lateral flange, apex with two minute divaricate triangular blades.

HOLOTYPE ♂, Lathong, Sikkim, 6,560 feet, July 26, 1959 (Schmid).

*Ormosia (Parormosia) leucostictula* is readily distinguished from other regional species that have conspicuously patterned wings, by having spots and dots in the cells as well as along the veins. The most similar such species is *O. (P.) mahabharatae* n. sp., of Nepal.

*Ormosia (Parormosia) mahabharatae* n. sp.

FEMALE. Length about 5.5 mm; wing 5.5 mm.

Allied to *leucostictula*, differing in the antennal and body coloration and in the pattern of the wings.

Antennae with proximal segments reddish brown, the outer one uniformly dark brown. Mesonotum brownish gray, praescutum with a conspicuous dark brown central stripe, broadest in front, becoming obsolete beyond midlength of the sclerite. Halteres darkened, the knobs yellowed on apical half or less. Legs black, tips of femora and extreme bases of tibiae light yellow. Wings much as in *lataurata*, the ground color darker, the white darkened pattern more restricted in the costal area and proximal fifth of wing, this being almost uniformly darkened.

HOLOTYPE ♀, Simbhangjang Pass, Mahabharat Range, Nepal, 8,797 feet, June 24, 1957 (Coher).

The only other regional species that has dots in the cells remote from the veins is *Ormosia* (*Parormosia*) **leucostictula** n. sp., which differs in the coloration of the body and antennae as well as in the details of wing pattern.

*Ormosia* (*Parormosia*) **peramata** n. sp.

General coloration black, including also the antennae and legs; basal antennal flagellar segments of male with very long verticils; halteres light yellow; wings yellow, restrictedly patterned with brown, including the stigma and a broad seam at cord; cell  $M_2$  open by atrophy of  $m$ ; male hypopygium with both dististyles bifid, the yellow inner style with about eight long yellow setae on the outer arm.

MALE. Length about 5 mm; wing 5.4 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments elongate, with dense, very long white setae, proximal four segments with greatly lengthened black verticils, the dorsal one much longer, from more than one-third to nearly one-half the entire flagellum; terminal segment longer than the penultimate. Head dark brown.

Pronotum black, sparsely pruinose, sides of scutellum obscure yellow. Mesonotum almost uniformly dark brown, praescutum with sides and a median line more grayish. Pleura and posterior notum more blackened. Halteres light yellow, the knobs golden yellow. Legs with trochanters brown, remainder black. Wings yellow, the prearcular and costal fields clearer yellow; a restricted but conspicuous brown pattern that includes the long stigma and a confluent seam over the cord; a vague clouding at wing tip and over outer medial fork; veins yellow, darkened in the patterned areas. Macrotrichia of cells abundant, yellow, inconspicuous, darker in the brown areas. Venation:  $R_2$  oblique, a little longer than  $R_{2+3}$ ; cell  $M_2$  open by atrophy of  $m$ ; anal veins divergent, 2nd  $A$  slightly sinuous near outer end.

Abdomen, including hypopygium, black. Male hypopygium with dististyles terminal; outer style blackened, bifid, the outer arm a slender spine with a small point on margin before midlength, inner arm shorter and broader, near apex with a small lateral spine; inner style broadly flattened, yellow, bifid, the slender outer arm unmodified, the margin of the broader inner arm with about eight or nine long yellow setae. Aedeagus slender, its sheath very broad.

HOLOTYPE ♂, Zema, Sikkim, 8,900 feet, May 24, 1959 (Schmid).

*Ormosia* (*Parormosia*) **peramata** is quite distinct from other previously described members of the subgenus in the wing pattern and hypopygial structure. All other species have the wings unpatterned or virtually so or else have a conspicuous spotted pattern of brown and whitish.

*Ormosia (Parormosia) perdiffusa* n. sp.

General coloration dark brown; antennal scape black, pedicel light yellow; halteres yellow; femora brown, extreme tips yellow; wings light brown with an abundant diffuse yellow pattern; cell 1st  $M_2$  closed; male hypopygium with outer arm of outer style and the inner style slender; gonapophysis unequally bifid.

MALE. Length about 4.5–5 mm; wing 5.5–6.2 mm.

FEMALE. Length about 6 mm; wing 6.5 mm.

Rostrum and palpi brownish black. Antennae with scape black, pedicel light yellow; proximal flagellar segments pale brown, the outer ones somewhat darker; verticils of proximal flagellar segments elongate. Head light gray.

Pronotum brownish gray, pretergites light yellow. Mesonotum dark brownish gray, the praescutum with the central region slightly darker brown. Pleura brownish gray, dorsopleural region variegated with obscure yellow. Halteres yellow. Legs with coxae brown, trochanters obscure yellow; femora brown, the extreme tip obscure yellow, tibia paler yellowish brown with base very narrowly more yellowed, tarsi brown. Wings light brown, the costal areas a little darker; an abundant pale diffuse yellow pattern, including major areas at cord, origin of  $R_s$ , fork of  $Sc$ , and extensively in the basal cells, including center of cell 2nd  $A$ ; beyond cord the pale areas more confluent and diffuse; veins light brown, yellow in the ground areas; trichia darkened in the brown ground parts, yellow in the pale patterned portions. Venation:  $R_2$  at or shortly beyond fork;  $R_{2+3+4}$  long, about twice the basal section of  $R_5$ ; cell 1st  $M_2$  closed,  $m-cu$  at close to fork of  $M$ ; anal veins divergent.

Abdomen, including hypopygium, dark brown. Male hypopygium with tergite broad, posterior border very gently emarginate. Outer dististyle with its outer arm very long and slender, narrowed very gradually to an acute point, surface microscopically scabrous; inner arm small, stout, margin curved, with abundant microscopic blackened elongate peg-like points; inner style long and slender, slightly more than one-half the outer style, on outer margin with three very long yellow setae, with additional shorter ones. Phallosome with gonapophysis unequally bifid, the axial spine longer. Apex of aedeagus capitate.

HOLOTYPE ♂, Ukhal, Pauri Garhwal, Kumaon, 9,000–9,800 feet, in *Rhododendron* association, May 12, 1958 (Schmid). Allotopotype ♀, pinned with type. Paratypes, several of both sexes, Manghu Chatti, Pauri Garhwal, 9,000–9,270 feet, May 20–21, 1958 (Schmid).

*Ormosia (Parormosia) perdiffusa* is readily told from other regional species of the subgenus having conspicuously patterned wings and very narrow yellow femoral tips by the nature of the wing pattern that includes diffuse yellow spots and bands as discussed. The hypopygial structure is entirely different from species such as *O. (P.) peramata* n. sp.

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